

II. SPECIFICATION AMENDMENTS

Please cancel the present Abstract (shown on page 42 of the specification) and replace with the new Abstract.

ABSTRACT

Signals are separated by introducing a function having a monotonously increasing characteristic like an exponential type function as a cost function, and applying an adaptive algorithm that minimizes that cost function in terms of a signal separation matrix. That is, there is provided a signal processing apparatus that separates and outputs an original signal from the observed signal $\underline{x}(t)$, in which multiple multidimensional signals are mixed, wherein the nonlinear function 21 is operated on an input observed signal $\underline{x}(t)$ and an estimated separation matrix $\underline{W}(t-1)$ estimated at a previous cycle. Then, an error signal $\underline{e}(t)$ is calculated 22 based on $\underline{y}(t)$ formed by this nonlinear function 21, the estimated separation matrix $\underline{W}(t-1)$ estimated at the previous cycle, and the observed signal $\underline{x}(t)$ at that time. Then, based on the calculated error signal $\underline{e}(t)$, the update of the separation matrix $\underline{W}(t)$ at that time is performed 23 such that consideration weight is increased when estimation errors are large using the cost function having a monotonously increasing characteristic.